

Trust for Nature: working together to protect biodiversity on private land¹

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Abstract

With over two thirds of Victoria in private ownership, the value of private land conservation is pivotal to the future of the state's biodiversity. Trust for Nature has been working for 40 years to protect conservation values on private land across Victoria. The Trust has worked with over 1000 landholders to permanently protect 52 287 ha with legally-binding conservation covenants. In the same period, Trust for Nature has strategically purchased 111 properties, currently retaining 46, representing an additional 42 842 ha of under permanent protection. The Trust has also been involved in major conservation campaigns. Through these and other measures, Trust for Nature has been actively involved in the conservation of some of Victoria's most threatened species and communities, including within urban landscapes. (*The Victorian Naturalist* 130 (4) 2013, 161–165)

Keywords: private land, conservation, covenants, landowners, threatened species, urban

Conservation on private land

Victoria is Australia's most highly cleared state and continues to lose habitat through direct clearing or degradation at the rate of several thousand hectares each year. As a result, many species of native plants and wildlife are threatened and some have become extinct.

Historically, responsibility for the conservation of native plants and wildlife has resided with public land managers, for example, Parks Victoria and the Department of Sustainability and Environment, who manage parks and conservation reserves for biodiversity; however, in Victoria, where two-thirds of the land is privately owned—particularly the more fertile and more highly cleared parts of the landscape—it is recognised more and more that private land conservation is pivotal to the long-term future of many species of native plants and wildlife.

Trust for Nature works to conserve native plants and wildlife on private land in Victoria. It was established under the *Victorian Conservation Trust Act 1972*, to work with landholders—farmers, retirees, families, etc.—to protect land permanently and provide ongoing support to these landowners. Trust for Nature has developed a number of innovative ways to conserve biodiversity on private land, and continues to evolve to meet the challenges and embrace the opportunities that arise in this exciting sector.

Protection of native habitat

One of the Trust's key objectives, under the Act, is to protect areas that are 'ecologically significant, of natural interest or beauty, of historic interest or of importance in relation to the conservation of wildlife or native plants'.

Trust for Nature has achieved this objective primarily through the delivery of voluntary, perpetual conservation covenants on private land; the purchase and management of land; or donation of land to the Crown. The significance of each of these conservation actions is that they represent permanent habitat protection, recognised as contributing to the International Union for Conservation of Nature's (IUCN) protected area network and to Australia's National Reserve System (NRS).

Since 1972, Trust for Nature, in partnership with more than 1000 landowners, has permanently protected 52 287 ha of habitat across the State under conservation covenant. Of particular significance has been the Trust's ongoing focus on the permanent protection of two of the most highly threatened ecosystems in the world: temperate grasslands and temperate woodlands. More than 2000 ha of native grassland and over 12 000 ha of woodland have been protected under conservation covenants across Victoria's farming landscape. The Trust also has tried to focus on the protection of unique

ecosystems such as the Strathbogie Range's perched bogs—tiny patches of wetland habitat created by groundwater seepages from the granite bedrock. Nearly all of the bogs occur on private land and over the past 10 years Trust for Nature has targeted their protection in the Goulburn–Broken catchment. To date, we have successfully negotiated permanent protection of bogs with 12 landowners in this region.

In the same period, Trust for Nature has purchased 111 properties, currently retaining 46 properties, including its flagship 30 000 ha Neds Corner Station on the Murray River, west of Mildura. Altogether, these properties represent an additional 42 842 ha of private land habitat permanently protected for conservation. As part of this program, Trust for Nature has targeted the purchase and protection of threatened ecosystems, particularly grasslands, woodlands and wetlands. For example, the Trust has recently purchased several properties on the Avoca Plains totalling 3021 ha that contain nationally significant grasslands, wetlands and Buloke woodlands. The properties are also home to nationally threatened species, including Plains-wanderer *Pedionomus torquatus* (Vcr), Chariot-wheels *Maireana cheelii* (Vv) and Slender Darling-pea *Swainsona murrayana* (Ve)².

One of the Trust's unique roles within Victoria's conservation arena has been its active support for the protection of land through public appeals or donations of land. Its role has been especially notable in two major conservation campaigns: to save Anglesea Heathlands and Green's Bush.

Anglesea Heathlands

The campaign to save the coastal heathlands between Anglesea and Airey's Inlet took more than five years of intense campaigning by the local community and the Great Ocean Road Committee in the early 1990s. At the time, nearly all of the heathlands were proposed for residential subdivision, including a 410 ha subdivision on one of three properties targeted for protection. The final planning solution consisted of a negotiated outcome across the three priority properties, ultimately resulting in:

- permanent protection of 228 ha of private native vegetation under covenant;
- purchase of 216 ha of habitat on one property

by Trust for Nature, with funding support from the Australian Government and State Government;

- purchase of 14 ha of habitat on another property, using funds raised by the Great Ocean Road Committee;
- donation of 14 ha of land to Trust for Nature by the owners of one of the properties; and
- planning restrictions on the approved subdivision, ensuring that native vegetation on the subdivided lots was retained.

Subsequently, the late Mary White, a passionate advocate for conservation of her beloved Anglesea Heathlands, donated her house to the Trust so that proceeds from its subsequent sale could further assist with conservation in the area.

Green's Bush

In 1985, the Green family applied to their local council to subdivide their 400 ha property into rural lots. A campaign began to save the bushland and add it to the adjacent Nepean State Park, including the establishment of an appeal by Trust for Nature to help raise funds to purchase the land. By 1988, the appeal had raised some \$1.3 million and, with additional funds from the State Government, Trust for Nature purchased 170 ha of Green's Bush. A planning solution negotiated for the remaining 230 ha of land allowed subdivision into 18 allotments, subject to stringent conditions and covenants with the Trust. In 1989, however, the State Government agreed to purchase the residual 230 ha of land, and incorporated it into what is now the Mornington Peninsula National Park.

Threatened flora protection

In addition to the protection of native habitat, Trust for Nature has focused on the protection of threatened species, using conservation covenants or land purchase as the principal way to secure threatened plants.

Currently, 368 threatened plant species, including 41 nationally threatened species, have been recorded on Trust for Nature covenants and properties. Of the approximately 1201 private properties across Victoria with conservation covenants, and Trust for Nature owned properties, nearly 40% are known to support threatened plants.

Species of particular significance in terms of known populations on Trust for Nature land

include Chariot Wheels *Maireana cheelii* (Vv), Concave Pomaderris *Pomaderris subplicata* (Vv), Euroa Guinea-flower *Hibbertia humifusa erigens* (Vv), Leafy Greenhood *Pterostylis cucullata* (Ve), Little Pink Spider-orchid *Caladenia rosella* (Ee), Matted Flax-lily *Dianella amoena* (Ee), Spiny Rice-flower *Pimelea spinibractea spinibractea* (Ce), Dwarf Kerrawang *Rulingia prostrata* (Ee) and Swamp Sheoak *Casuarina obesa* (e).

Active management

To support private landowners, Trust for Nature has an ongoing Stewardship Program. The Stewardship Program entails the development and implementation of management plans for all of its covenants and properties. On grassland and woodland sites, in particular, this management may include active habitat disturbance through grazing or ecological burns to reduce biomass and maintain species diversity. On other sites the focus may be on weed control. For example, on the Trust-owned property 'Harbury' near Gembrook, the local management committee has actively removed an infestation of the woody weed Sweet Pittosporum *Pittosporum undulatum*, resulting in an increase in the population size of two rare plant species: Bristly Shield-fern *Lastroeopsis hispida* and Long Pink-bells *Tetradthea stenocarpa*.

Other examples of active management across the State have included:

- reintroductions of significant species or additional life-forms;
- establishment of fencing enclosures to improve understorey condition or protect populations of threatened species, including Whipstick Westringia *Westringia crassifolia* (Ee);
- guarding of notable plants from browsing by deer and native herbivores;
- direct-seeding of sites to add understorey and groundcover diversity; and
- creation of supplement habitat.

Conservation in urban landscapes

Some of Victoria's most threatened species and communities occur in urban landscapes. As urbanisation continues to expand, conservation in these areas is becoming increasingly important. Trust for Nature's most developed region, Port Phillip and Western Port, makes

up approximately 5.6% of Victoria's total area, but contains 212 of 1201 covenants (as of 28 February 2013), the highest number of any region. This region covers greater Melbourne, Phillip Island, Mornington Peninsula, Dandenong Ranges, Yarra Ranges, Kinglake Ranges, Werribee Ranges and Macedon Ranges. There are also seven Trust for Nature owned properties in this region. Together, these covenants and Trust owned properties protect a diverse range of habitats from rainforest through to grasslands and wetlands, as well as significant plant and animal species. Several examples are discussed in more detail below.

Southern Brown Bandicoot

Areas of the former Koo Wee Rup Swamp and surrounds, south-east of Melbourne, are subject to ongoing development pressures from an increased demand for residential land. This area retains an important population of the nationally endangered Southern Brown Bandicoot, south-eastern subspecies, *Isoodon obesulus obesulus* (Coates *et al.* 2008). In this largely agricultural landscape, the bandicoot occurs in a variety of habitats, including small patches of remnant vegetation as well as residential and farmland areas. Trust for Nature covenants have been established across a number of properties where bandicoots have been recorded or where suitable habitat exists. In addition to protecting existing habitat, we have provided landowners with cat traps to help reduce the threat of predation on bandicoots, and weed control grants to improve habitat values.

Tootgarook Swamp

The Tootgarook Swamp on the southern Mornington Peninsula is an extensive wetland system with important conservation values. The peat soils are subject to inundation throughout large areas, supporting endangered wetland formations and Sedge Wetlands, Tall Marsh and Swamp Scrub vegetation classes. The area is surrounded by residential properties to the north and farmland to the south, and development pressure has been increasing. In response, Trust for Nature has been working for many years to protect this site. In partnership with private landowners and the Mornington Peninsula Shire Council, we were recently successful

in establishing conservation covenants over two large properties covering over 200 ha of the Swamp. One of these properties contains a large tract of the state listed Coastal Moonah *Melaleuca lanceolata* subsp. *lanceolata* Woodland Community. Within this community there is a large population of the nationally listed Leafy Greenhood orchid *Pterostylis cucullata*.

Phascogales and Spider Orchids

In the foothills north-east of Melbourne near Warrandyte, Trust for Nature has worked collaboratively with residents and local groups to protect the state listed Brush-tailed Phascogale *Phascogale tapoatafa* and the nationally endangered Little Pink Spider-orchid *Caladenia rosella*.

The Brush-tailed Phascogale has been recorded on a number of Trust for Nature covenants throughout the area. Residents have reported the species utilising modified habitats such as wood sheds and roofs as nesting sites, which may in part be due to a lack of suitable hollow bearing trees. Using funds from a generous private donation, Trust for Nature was able to establish a program to erect nest boxes on covenants to supplement Phascogale habitat. We also purchased a nest box camera which we will use to monitor the nest boxes over time and gauge their success.

The Little Pink Spider-orchid is thought to have once been widespread and common, being associated with woodlands (DSEWPC 2013); however, it is now known from only a few very small, disjunct populations north-east of Melbourne. Trust for Nature has worked with landowners to establish conservation covenants to help protect this species at locations where it is known. Furthermore, with the assistance of a local foundation, in 2009 we were able to purchase a property that supports a population of the species. Although small, this one acre property protects a significant patch of the rare orchid.

Fairy Lanterns

Fairy Lanterns *Thismia rodwayi* is a saprophytic herb that grows below the leaf litter on a creeping mycorrhizal root system. Only the tiny red, lantern-like flower, with a maximum height of 30 mm, appears above the ground (Walsh and En-

twistle 1994–1999). Consequently, the species is very difficult to find, and had not been collected in the wild in Victoria since 1935. However, in 2008, Trust for Nature covenants in the Gladysdale area discovered a single individual on their property. This significant record highlights the importance of landowner knowledge and observations from which Trust for Nature's Stewardship Program is able to support and benefit.

Powerful Owl

Australia's largest owl, the state listed Powerful Owl *Ninox strenua*, has been reported from a number of Trust for Nature covenants in the Port Phillip and Western Port region. In particular, a large number of records come from the Pakenham Upper/Gembrook area east of Melbourne, where there is a high concentration of covenanted properties. This cluster of properties helps to provide a corridor of habitat between the Dandenong Ranges and Bunyip State Park. Links like these are likely to provide essential connectivity, particularly for species such as the Powerful Owl, which has large habitat requirements and is estimated to have a range from many hundreds to thousands of hectares (McNabb and McNabb 2011). Trust for Nature also has created management plans that focus on retaining and improving Powerful Owl habitat in this area.

The future of conservation on private land

Trust for Nature is one of several private land conservation trusts in Australia. Our role in Victoria's conservation sector arena continues to grow. One of our goals over the next five years is to develop, with our partners, new and innovative ways to conserve Victoria's biodiversity while providing ongoing support to our volunteer covenantors. Our achievements in the conservation of threatened species are a strong base from which we can continue to promote the importance of conservation on private land.

For more information about the Trust, please visit our website: www.tfn.org.au.

Notes

1. This paper is adapted from Robinson *et al.* (2011) Beyond parks and reserves—the importance of conservation on private land. Australasian Plant Conservation. *Journal of the Australian Network for Plant Conservation* 20, 1 (Jun-Aug 2011).

2. The species status abbreviations in this article are shown in the following format:

Upper case letters indicate a federal listing in the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act); lower case letters indicate a state listing in the Advisory Lists of Threatened Species.

CR/cr = Critically Endangered, E/e = Endangered, V/v = Vulnerable.

References

- Coates T, Nicholls D and Willig R (2008) The distribution of the Southern Brown Bandicoot *Isodon obesulus* in south central Victoria. *The Victorian Naturalist*. **125**, 128–139.
- DSE (2005) Advisory list of rare or threatened plants in Victoria – 2005. (Department of Sustainability and Environment: East Melbourne)

DSE (2013) Advisory list of threatened vertebrate fauna in Victoria – 2013. (Department of Sustainability and Environment: East Melbourne)

DSEWPC (2013) *Caladenia rosella* in Species Profile and Threats Database (Department of Sustainability, Environment, Water, Population and Communities: Canberra). Available from: <http://www.environment.gov.au/sprat>. Accessed 28 February 2013.

McNabb E and McNabb J (2011) Predispersal Range, Behaviour and Use of Exotic Roost-trees by a Subadult Powerful Owl *Ninox strenua*. *Australian Field Ornithology* **28**, 57–64.

Walsh N and Entwistle T (1994–1999) *Flora of Victoria*, Vols 2–4 (Inkata Press: Melbourne)

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Scientists, agencies and community working together: a key need for invertebrate conservation in Victoria

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Abstract

Cooperation of scientists, conservation agencies and the wider community is critical for pursuing invertebrate conservation, but many problems can arise in promoting this approach effectively. They are exemplified here by consideration of four notable flagship species in Victoria: the Giant Gippsland earthworm, Golden sun-moth, Eltham copper butterfly and Ancient greenling damselfly, which are supported to varying extents by recovery teams and normal recovery plans and by community enthusiasm and participation in their conservation. A fifth example of ‘working together’ is the Invertebrate Survey Group of the Field Naturalists’ Club of Victoria, whose activities are discussed in the context of broader needs to promote values of community participation. (*The Victorian Naturalist* 130 (4) 2013, 165–173)

Key words: Invertebrate conservation, scientists, agencies, volunteers, recovery teams

Introduction

Conservation management, widely seen as essential for the wellbeing of species and natural environments, has many centres of interest, each with implications well beyond the immediate focus of attending a particular threatened species, site or biotope. However, many of the less obvious or least known groups of organisms receive little consideration, or efforts for conservation. The need for ‘working together’ for conservation extends far beyond the most popular animals (especially birds and mammals) and vascular plants. The massive taxonomic and ecological diversity of invertebrates and their roles in the provision of essential ecological services that help maintain life has been the subject of many books and papers over

the last 30 years, with awareness of their importance catalysed through a key essay by EO Wilson (1987). In terms of number of species, invertebrates dominate the global fauna. Estimates of the numbers of non-marine invertebrate species on Earth have varied widely, with estimates in excess of 30 million species. However, a more recent estimate puts the figure at around 3.7 million species of which around two thirds are not named (Hamilton *et al.* 2010). If this figure is correct, then Australia could be home to around 10% of the world’s fauna—an estimated 300 000 species of which fewer than half have been formally named (Yen and Butcher 1997). However, the number of ‘species’ does not properly reflect the variety present. Molec-